Alex Maass  
am838

CS 2024: Assignment 9 Report

The problem we are solving in this assignment is to build a coordinate point reader. We are to write a program which will read a file and create instances of a Point class for each pair of coordinate points found in the file. To do this, we need to make use of the various stream classes/methods and create a Point class. In addition, the stream insertion and extraction operations for the Point class should be overwritten to allow direct string input and output for the class.

In order to meet the various requirements specified above, I create a Point class that is found in Point.h. All of the methods of the Point class are implemented in the header file. Each point will have two private variables (xCoordinate & yCoordinate) to store the x and y coordinates of each pair of coordinate points. A constructor is created for the Point class to take x and y coordinate values and store them in the previously mentioned variables. Finally, the stream insertion and extraction operators are overwritten to allow direct string input and output from the class using the insertion and extraction operators. For the stream output operator, I simply overwrote the operator to print out the coordinate values stored in the xCoordinate and yCoordinate variables in the format of “(x,y).” For the stream input operator, I took the istream argument to the function and converted it to a string. Then I took that string and turned it into an instance of the istringstream class. By doing so, I was able to extract the coordinate values from the string and store them in the Point instance. In the main method, I set up a test to read a file and use the operators to edit coordinate values of a Point instance and then print out the Point instance. To do this, I created an instance of istream to read the input from a file. Since istream is delimited by the ‘\_‘ space character, I am able to read each pair of coordinate points individually. By taking advantage of this feature I ensure that only 1 point is passed into the Point stream insertion and extraction operations.

The main point of this assignment was to teach me stream operation in C++. The greatest difficulty I had was figuring out how to convert an instance of istream into a string. When I figured out that istream’s “>>” operator could do this very easily, it was smooth sailing from there.